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The full report is titled “Psychosocial Factors and Coronary Calcium in Adults without Clinical Cardiovascular Disease.” It is in the 6 June 2006 issue of *Annals of Internal Medicine* (volume 144, pages 822-831). The authors are A.V. Diez Roux, N. Ranjit, L. Powell, S. Jackson, T.T. Lewis, S. Shea, and C. Wu.

## Psychosocial Factors and Coronary Calcium

### What is the problem and what is known about it so far?

Atherosclerosis is a disease process in which plaques develop on the inside walls of arteries, the blood vessels that transport blood containing oxygen to the body. Coronary atherosclerosis refers to the presence of these plaques in the arteries that supply blood to the heart muscle. People can have coronary artery plaques but have no symptoms of cardiovascular disease (subclinical coronary atherosclerosis). When these plaques become large or rupture, they can block off blood flow through the artery. When this occurs in the coronary arteries, the arteries that supply blood to heart muscle, a heart attack can result. Previous studies have shown a link between coronary artery disease events, such as heart attack, and psychosocial factors, such as stress, anxiety, depression, and anger. It is not known whether this link is because psychosocial factors can trigger the development of atherosclerosis or because these factors trigger the events in people who already have atherosclerosis. If people with high levels of stress, anxiety, depression, or anger are more likely to have subclinical coronary atherosclerosis than those with low levels of these psychosocial factors, this would suggest that the psychosocial factors play a role in the development of the disease rather than just triggering events once the disease is already present.

### Why did the researchers do this particular study?

To find out whether there is an association between subclinical atherosclerosis and stress, anxiety, depression, and anger.

### Who was studied?

6789 adults 45 to 84 years of age who had no history of cardiovascular disease and were participating in a larger study called the Multiethnic Study of Atherosclerosis.

### How was the study done?

Participants completed standard questionnaires to measure their levels of chronic stress, anxiety, depression, and anger and had a special x-ray test called a cardiac computed tomography scan to measure the amounts of calcium in their coronary arteries. Previous studies showed an association between the presence of calcium in coronary arteries on computed tomography scans and future cardiovascular disease events, such as heart attack. The researchers then evaluated whether people with higher levels of chronic stress, anxiety, depression, or anger were more likely to have coronary calcium than those with lower levels of these psychosocial factors.

### What did the researchers find?

People with high levels of chronic stress, anxiety, depression, or anger were not more likely to have coronary calcium than those with lower levels of these psychosocial factors.

### What were the limitations of the study?

The study measured the psychosocial factors at one point in time, which might not accurately reflect lifetime levels of these factors.

### What are the implications of the study?

Chronic stress, anxiety, depression, and anger do not seem to be related to the presence of subclinical coronary atherosclerosis. This suggests that these psychosocial factors may be related to coronary events in other ways rather than by triggering the development of plaque in arteries.

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